

# HUNTER VALLEY OPERATIONS



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## Environment Protection Licence 640 Monitoring Data – February 2022 Published

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# 1 Overview

<b>Environmental Protection Licence Number:</b>	640
<b>Licence Holder:</b>	HV Operations Pty Ltd (HVO)
<b>Address of Premises:</b>	Hunter Valley Operations, Lemington Road, Singleton, NSW, 2330
<b>Licence Holder Postal Address:</b>	PO Box 315, Singleton, NSW, 2330
<b>EPA Public Register Link:</b>	<a href="https://apps.epa.nsw.gov.au/prpoeoapp/Detail.aspx?instid=640&amp;id=640&amp;option=licence&amp;searchrange=licence&amp;range=POEO%20licence&amp;prp=no&amp;status=Issued">https://apps.epa.nsw.gov.au/prpoeoapp/Detail.aspx?instid=640&amp;id=640&amp;option=licence&amp;searchrange=licence&amp;range=POEO%20licence&amp;prp=no&amp;status=Issued</a>

The locations of each sampling or monitoring point number identified in EPL 640 are displayed in **Figure 1**.

# 2 Definitions

Abbreviation	Explanation
DNR	Data Not Received
mm/s	Millimetres per Second
dB	Decibels
g/m <sup>2</sup> /month	Grams per Metre Square per Month
µg/m <sup>3</sup>	Micrograms per Cubic Meter of Air
µS/cm	Microsiemens per Centimetre
pH	A measure of the acidity or alkalinity of a solution
mg/L	Milligrams per Litre
NTU	Nephelometric Turbidity Units
ML/day	Megalitres per Day (1ML = 1,000,000L)
KL/day	Kilolitres per Day
PM10	Particulate Matter of 10 Microns in diameter or smaller
HVAS	High Volume Air Sampler
TEOM	Tapered Element Oscillating Microbalance
TSP	Total Suspended Particles
TSS	Total Suspended Solids
t	tonnes
YTD	Year To Date - rolling 12 month average

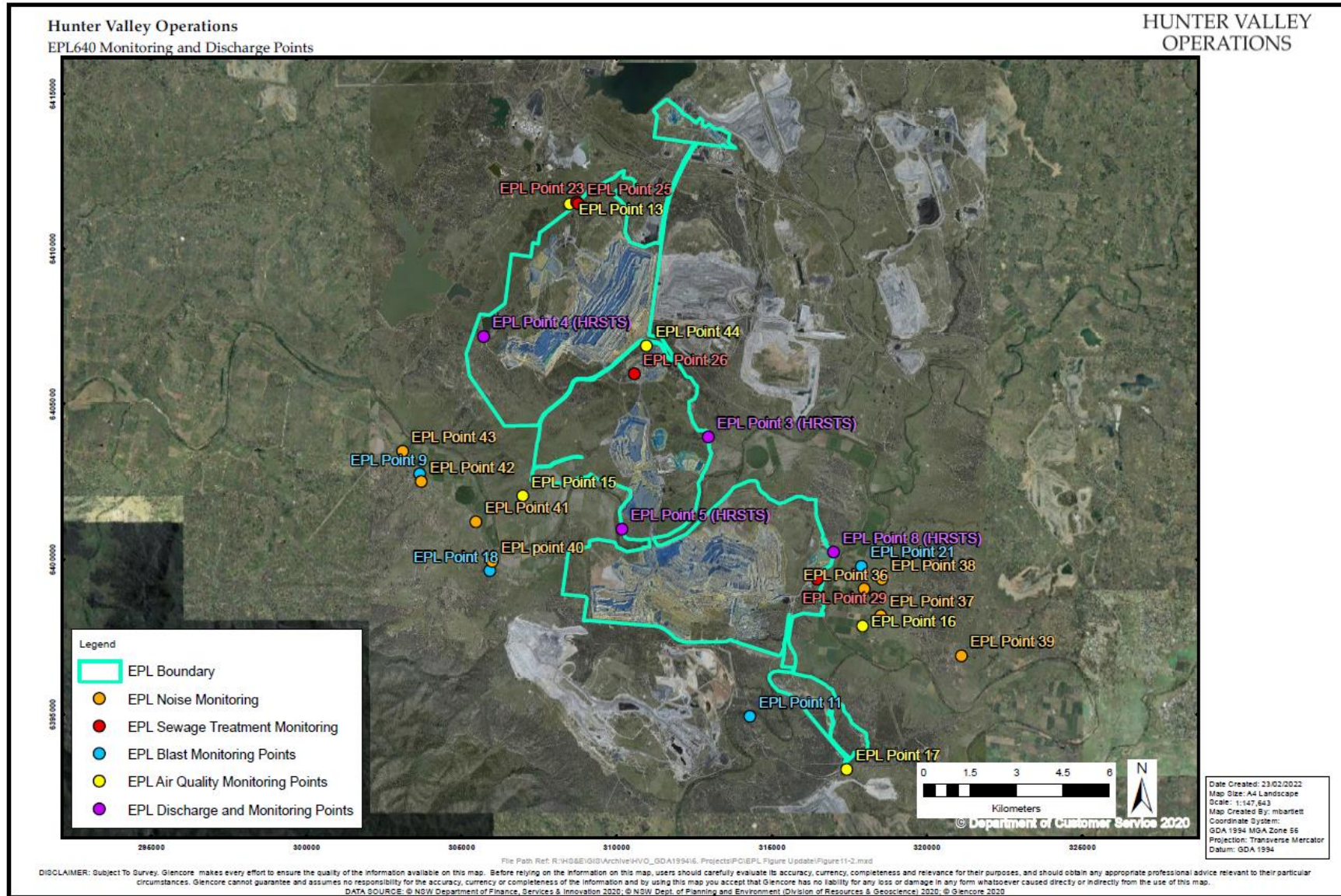


Figure 1 - EPL 640 Monitoring Locations



### 3 Air Quality

Date Last Sampled: 28/02/2022

Date Obtained: 1/03/2022

Table 1- Particulate Matter Monitoring (<10µm)

Date	Unit of Measure	Monitoring Frequency & Capture	Monitoring Point				
			EPL ID 13 (Howick)	EPL ID 15 (Wandewoi)	EPL ID 16 (Knodlers Lane)	EPL ID 17 (Golden Highway)	EPL ID 44 (North CHPP)
1/2/2022	µg/m <sup>3</sup>	Continuous	32.5	18.3	20.9	25.5	*
2/2/2022	µg/m <sup>3</sup>		12.0	7.6	8.4	12.8	*
3/2/2022	µg/m <sup>3</sup>		16.6	12.2	13.1	23.7	*
4/2/2022	µg/m <sup>3</sup>		19.5	14.8	13.3	20.7	*
5/2/2022	µg/m <sup>3</sup>		20.3	15.2	12.7	18.8	15.4
6/2/2022	µg/m <sup>3</sup>		22.9	14.0	14.5	18.4	21.8
7/2/2022	µg/m <sup>3</sup>		23.9	12.1	12.6	16.2	18.3
8/2/2022	µg/m <sup>3</sup>		20.4	12.0	11.4	19.7	14.8
9/2/2022	µg/m <sup>3</sup>		26.2	36.1	19.5	25.6	23.0
11/2/2022	µg/m <sup>3</sup>		49.3	29.3	30.8	45.0	39.0
11/2/2022	µg/m <sup>3</sup>		22.5	18.1	15.9	23.0	17.9
12/2/2022	µg/m <sup>3</sup>		25.7	19.6	16.4	20.9	21.9
13/2/2022	µg/m <sup>3</sup>		33.0	20.4	15.5	20.3	21.3
14/2/2022	µg/m <sup>3</sup>		39.8	27.2	20.0	27.3	27.4
15/2/2022	µg/m <sup>3</sup>		38.1	25.2	21.7	29.2	31.2
16/2/2022	µg/m <sup>3</sup>		34.2	25.8	20.2	21.9	29.8
17/2/2022	µg/m <sup>3</sup>		30.7	22.8	24.5	26.8	26.1
18/2/2022	µg/m <sup>3</sup>		29.1	23.8	20.4	22.1	16.6
19/2/2022	µg/m <sup>3</sup>		24.3	18.4	15.5	21.6	32.8
20/2/2022	µg/m <sup>3</sup>		23.0	23.8	20.3	30.8	30.7
21/2/2022	µg/m <sup>3</sup>		25.4	18.3	21.3	24.7	19.3
22/2/2022	µg/m <sup>3</sup>		21.7	19.7	13.9	15.2	18.7

Date	Unit of Measure	Monitoring Frequency & Capture	Monitoring Point				
			EPL ID 13 (Howick)	EPL ID 15 (Wandewoi)	EPL ID 16 (Knodlers Lane)	EPL ID 17 (Golden Highway)	EPL ID 44 (North CHPP)
23/2/2022	µg/m <sup>3</sup>		19.0	16.2	8.9	12.3	11.4
24/2/2022	µg/m <sup>3</sup>		11.8	12.4	8.6	9.1	11.9
25/2/2022	µg/m <sup>3</sup>		19.1	16.2	14.2	17.3	27.7
26/2/2022	µg/m <sup>3</sup>		21.6	14.2	9.8	13.3	17.0
27/2/2022	µg/m <sup>3</sup>		21.6	13.9	11.7	15.6	20.8
28/2/2022	µg/m <sup>3</sup>		24.6		9.0	12.8	16.8
Monthly Meaningful Data							
February	µg/m <sup>3</sup>	Minimum	11.8	7.6	8.4	9.1	11.4
	µg/m <sup>3</sup>	Mean	25.3	18.8	15.9	21.1	22.2
	µg/m <sup>3</sup>	Maximum	49.3	36.1	30.8	45.0	39.0
	µg/m <sup>3</sup>	Median	23.5	18.3	15.0	20.8	21.1

\* Data miscapture from equipment downtime.

## 4 Surface Water Monitoring Data

**Date Sampled:** No discharging occurred in February

**Date Obtained:** No discharging occurred in February

*Table 2 – Mine Water Discharge Monitoring*

Discharge Point	Pollutant	Unit of Measure	Licence Limits	No. Samples Required by Licence	No. Samples Collected and Analysed
EPL ID 3 (Dam 11N)	pH	pH	6.5-9.5	0	0
	Total Suspended Solids	Milligrams per Litre	120	0	0
EPL ID 4 (Dam 9W)	pH	pH	6.5-9.5	0	0
	Total Suspended Solids	Milligrams per Litre	120	0	0
EPL ID 8 (Dam 15S)	pH	pH	6.5-9.5	0	0
	Total Suspended Solids	Milligrams per Litre	120	0	0

# 5 Blast Monitoring Data

Date Last Sampled: 28/2/2022

Date Obtained: 1/03/2022

Table 3 – Blast Monitoring (Air Blast Overpressure and Ground Vibration))

Blast ID	Date & Time	Unit of Measure	Monitoring Frequency & Capture	EPL Limits		Monitoring Point			
				95% of Blasts	100% of Blasts	Moses Crossing EPL ID 18	Jerrys Plains EPL ID 9	Maison Dieu EPL ID 21	Warkworth EPL ID 11
WN47LPG02A	1/02/2022 13:03	dB(L)	All blasts 100%	115	120	102.16	100.58	94.49	98.88
P208V3P02A_P206PF102A_P208PF301A	4/02/2022 13:31	dB(L)		115	120	98.71	97.87	108.58	96.87
P210BF406A	8/02/2022 12:59	dB(L)		115	120	85.2	90.68	93.55	94.88
WN47LPG02B	9/02/2022 13:06	dB(L)		115	120	83.32	96.11	88.42	87.27
P208FCL12A	11/02/2022 13:01	dB(L)		115	120	106.29	88.56	95.97	87.81
P208PF103A	11/02/2022 13:02	dB(L)		115	120	97.55	87.78	94.75	86.85
RW34AFA01A	14/02/2022 12:55	dB(L)		115	120	92.27	83.85	88.37	86.39



Blast ID	Date & Time	Unit of Measure	Monitoring Frequency & Capture	EPL Limits		Monitoring Point			
				95% of Blasts	100% of Blasts	Moses Crossing	Jerrys Plains	Maison Dieu	Warkworth
						EPL ID 18	EPL ID 9	EPL ID 21	EPL ID 11
P209WK303A	15/02/2022 12:37	dB(L)	All blasts 100%	115	120	88.1	96.74	94.08	90.41
P210WK301A	15/02/2022 12:39	dB(L)		115	120	97.43	92.52	93.4	90.8
WS46ULP01B	15/02/2022 12:57	dB(L)		115	120	86.66	99.54	84.92	89.32
P124WK903B	17/02/2022 12:03	dB(L)		115	120	95.8	99	93.45	91.85
RW3613001A	18/02/2022 13:12	dB(L)		115	120	92.43	97.83	98.96	92.98
RW37GMP02A & RW37GMA01A	18/02/2022 13:13	dB(L)		115	120	102.69	89.1	93.33	98.35
P209WK307A	21/02/2022 13:12	dB(L)		115	120	85.21	101.63	96.86	97.59
P208MA308A	23/02/2022 13:02	dB(L)		115	120	100.55	104.25	99.81	100.01
M1T113501A	24/02/2022 12:58	dB(L)		115	120	101.99	105.07	97.83	108.34
RW34BFA01A	28/02/2022 12:26	dB(L)		115	120	104.81	105.14	92.91	89.11

Blast ID	Date & Time	Unit of Measure	Monitoring Frequency & Capture	EPL Limits		Monitoring Point			
				95% of Blasts	100% of Blasts	Moses Crossing EPL ID 18	Jerrys Plains EPL ID 9	Maison Dieu EPL ID 21	Warkworth EPL ID 11
<b>Monthly Meaningful Data</b>									
<b>February</b>		dB(L)	Minimum	115	120	83.32	83.85	84.92	86.39
		dB(L)	Mean	115	120	95.36	96.25	94.69	93.39
		dB(L)	Maximum	115	120	106.29	105.14	108.58	108.34
		dB(L)	Median	115	120	97.43	97.83	94.08	89.11

Blast ID	Date & Time	Unit of Measure	Monitoring Frequency & Capture	EPL Limits			Monitoring Point		
				95% of Blasts	100% of Blasts	Moses Crossing EPL ID 18	Jerrys Plains EPL ID 9	Maison Dieu EPL ID 21	Warkworth EPL ID 11
WN47LPG02A	1/02/2022 13:03	mm/s	All Blasts 100%	5	10	0.11	0.04	0.03	0.49
P208V3P02A_P206PF102A_P208PF301A	4/02/2022 13:31	mm/s		5	10	0.11	0.03	0.15	0.46
P210BF406A	8/02/2022 12:59	mm/s		5	10	0.1	0.02	0.1	0.26
WN47LPG02B	9/02/2022 13:06	mm/s		5	10	0.12	0.06	0.04	0.07
P208FCL12A	11/02/2022 13:01	mm/s		5	10	0.1	0.02	0.05	0.09
P208PF103A	11/02/2022 13:02	mm/s		5	10	0.1	0.02	0.08	0.18
RW34AFA01A	14/02/2022 12:55	mm/s		5	10	0.19	0.05	0.05	0.29
P209WK303A	15/02/2022 12:37	mm/s		5	10	0.1	0.03	0.05	0.23
P210WK301A	15/02/2022 12:39	mm/s		5	10	0.1	0.03	0.29	1.59
WS46ULP01B	15/02/2022 12:57	mm/s		5	10	0.18	0.11	0.1	0.51
P124WK903B	17/02/2022 12:03	mm/s		5	10	0.11	0.04	0.04	0.12

Blast ID	Date & Time	Unit of Measure	Monitoring Frequency & Capture	EPL Limits		Monitoring Point			
				95% of Blasts	100% of Blasts	Moses Crossing EPL ID 18	Jerrys Plains EPL ID 9	Maison Dieu EPL ID 21	Warkworth EPL ID 11
RW3613001A	18/02/2022 13:12	mm/s		5	10	0.14	0.03	0.05	0.15
RW37GMP02A & RW37GMA01A	18/02/2022 13:13	mm/s		5	10	0.17	0.05	0.05	0.71
P209WK307A	21/02/2022 13:12	mm/s		5	10	0.1	0.03	0.04	0.91
P208MA308A	23/02/2022 13:02	mm/s		5	10	0.1	0.02	0.04	0.11
M1T113501A	24/02/2022 12:58	mm/s		5	10	0.17	0.15	0.13	2.17
RW34BFA01A	28/02/2022 12:26	mm/s		5	10	0.21	0.04	0.1	0.32
Monthly Meaningful Data									
<b>February</b>		mm/s	Minimum	5	10	0.10	0.02	0.03	0.07
		mm/s	Mean	5	10	0.13	0.05	0.08	0.51
		mm/s	Maximum	5	10	0.21	0.15	0.29	2.17
		mm/s	Median	5	10	0.11	0.03	0.05	0.29

# 6 Sewage Treatment Plant Monitoring Data

Date Sampled: 2 February 2022

Date Obtained: 11 March 2022

**Table 4 Sewage Treatment Plant Monitoring**

Monitoring Site	Date & Time	Pollutant	Unit of Measure	Monitoring Result
EPA ID 23	2/02/2022 10:20:00 AM	Faecal Coliforms	Colony forming units/100ml	420000
		pH	pH	7.11
EPA ID 25	02/02/2022 10:30:00	Faecal Coliforms	Colony forming units/100ml	Dry
		pH	pH	
EPA ID 26	2/02/2022 11:40:00 AM	Faecal Coliforms	Colony forming units/100ml	~18000
		pH	pH	7.65
EPA ID 29	2/02/2022 12:35:00 PM	Faecal Coliforms	Colony forming units/100ml	<100
		pH	pH	9.37

# 7 Noise Monitoring Data

Date Sampled: 23/2/2022

Date Obtained: 10/03/2022

**Table 5 Night LAeq,15minute Generated by HVO Against EPL Criteria**

Location	Date & Time	Wind Speed (m/s) <sup>1</sup>	Stability Class <sup>1</sup>	Criterion dB	Criterion Applies? <sup>2</sup>	HVO LAeq dB <sup>3,4</sup>	Exceedance dB <sup>4,5</sup>
EPA ID 36	23/02/2022 21:00	3.6	E	41	No	IA	NA
EPA ID 37	23/02/2022 21:50	3.2	E	40	No	IA	NA
EPA ID 38	23/02/2022 21:25	3.7	E	39	No	IA	NA
EPA ID 39	23/02/2022 22:45	4.1	D	37	No	IA	NA
EPA ID 40	23/02/2022 23:14	3.6	E	39	No	37	NA
EPA ID 41	23/02/2022 22:52	4.1	D	39	No	33	NA
EPA ID 42	23/02/2022 21:22	3.6	D	40	No	33	NA
EPA ID 43	23/02/2022 21:00	3.6	E	40	No	33	NA

**Notes:**

1. Atmospheric data is sourced from the HVO Cheshunt AWS using logged meteorological data;
2. Noise criteria apply under all meteorological conditions except during periods of rain or hail, wind speeds greater than 3 m/s measured at 10 metres above ground level, stability category F conditions and wind speeds greater than 2 m/s measured at 10m above ground level, or stability category G conditions;
3. Site-only LAeq,15minute attributed to HVO, including modifying factors if applicable;
4. Bold results in red indicate exceedance of criterion; and
5. NA in exceedance column means atmospheric conditions outside specified in approval, therefore criterion was not applicable.

Table 6 Night  $L_{A1,1\text{minute}}$  Generated by HVO Against EPL Criteria

Location	Date & Time	Wind Speed (m/s) <sup>1</sup>	Stability Class <sup>1</sup>	Criterion dB	Criterion Applies? <sup>2</sup>	HVO $L_{Aeq}$ dB <sup>3,4</sup>	Exceedance dB <sup>4,5</sup>
EPA ID 36	23/02/2022 21:00	3.6	E	46	No	IA	NA
EPA ID 37	23/02/2022 21:50	3.2	E	46	No	IA	NA
EPA ID 38	23/02/2022 21:25	3.7	E	46	No	IA	NA
EPA ID 39	23/02/2022 22:45	4.1	D	46	No	IA	NA
EPA ID 40	23/02/2022 23:14	3.6	E	46	No	40	NA
EPA ID 41	23/02/2022 22:52	4.1	D	46	No	40	NA
EPA ID 42	23/02/2022 21:22	3.6	D	46	No	40	NA
EPA ID 43	23/02/2022 21:00	3.6	E	46	No	35	NA

Notes:

1. Atmospheric data is sourced from the HVO Cheshunt AWS using logged meteorological data;
2. Noise criteria apply under all meteorological conditions except during periods of rain or hail, wind speeds greater than 3 m/s measured at 10 metres above ground level, stability category F conditions and wind speeds greater than 2 m/s measured at 10m above ground level, or stability category G conditions;
3. Site-only  $L_{A1,1\text{minute}}$  attributed to HVO;
4. Bold results in red indicate exceedance of criterion; and
5. NA in criterion column indicates no criterion is applicable at this location. NA in exceedance column means atmospheric conditions outside specified in approval, therefore criterion was not applicable.